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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Gene L. Cangiani

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EXAMINER

BLUDAU, BRANDON S

ART UNIT

PAPER NUMBER

2132

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,945

Applicant(s)

CANGIANI ET AL.

Examiner

Brandon S. Bludau

Art Unit

2132

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,13,14,16,17 and 19-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,13-14,16-17 and 19-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is in reply to amendment filed on March 29, 2006. Claims 1,13,16,19,24,28 and 29 are amended. Claims 2-12,15 and 18 are cancelled. Claims 1,13,14,16-17 and 19-29 are pending.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1 and 28 are rejected under 35 U.S.C. 101 because it lacks a useful and tangible result commensurate with the claim language, specifically "a method of transmitting a signal". The limitations of the claim do not include a transmission step.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 28 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: a step of transmitting the generated signal. The claim is directed to a method of transmitting a signal, however the comprising steps stop at the generation and amplification of the signal.

4. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Lines 6 and 7 read: "an amplifier connected to the code generator and the cryptographic unit the pulses". The phrase "the pulses" seems to be out of place.

Claim Rejections - 35 USC § 103

5. Claims 1,13-14,16-17 and 19-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keegan (US Patent 4972431).

6. As per claim 1, Keegan discloses a method of transmitting a signal, comprising:

Generating a sequence of pseudorandom noise chips at a base power level (column 1 lines 64- column 2 lines 4); and

Amplifying a sequence of a group of the chips to a higher power level than chips not in the group so that successive ones of said groups of chips are separated by a time interval that is related to a cryptographic sequence, and wherein the durations of the time intervals between successive groups represents synchronization information for said signal (column 2 lines 14-26 and column 4 lines 43-68).

The Examiner asserts that modulating the PN code with an encrypted code to obtain the encrypted PN code is in effect amplifying select groups of the PN code based on the cryptographic sequence. And without knowledge of the PN code and the cryptographic sequence it is technically impossible to correlate the code, further more, the pulses modulated by the cryptographic sequence would determine the

synchronization of the signal since one must have knowledge of the cryptographic sequence to correlate the signal at the receiver.

7. As per claim 13, Keegan discloses a transmitter suitable for transmitting a staggered pulse signal, comprising:

A code generator configured to generate a plurality of pulses according to a code (column 2 lines 1-4);

A cryptographic unit configured to generate a cryptographic sequence based on a cryptographic key (column 4 lines 46-52); but does not disclose:

An amplifier connected to the code generator and the cryptographic unit, wherein the amplifier amplifies a group of a sequence of pulses to a higher power level than pulses not in said group, so that successive ones of said groups of pulses are separated by a time interval that is related to said cryptographic sequence, and wherein the durations of the time intervals between said successive groups represents synchronization information for the signal.

While Keegan doesn't specifically disclose an amplifier connected to the code generator, however, in column 8 lines 9-11, Keegan discloses the common use of an amplifier in transmitter systems. It is well known in the art that satellite transmitters usually contain an amplifier, and since Keegan discloses the cryptographic unit, it would be understood that the amplifier would amplify the modulated signal which is encrypted such that the pulses of the encrypted signal serve as the synchronization information of the signal in the same manner as other spread spectrum signals as is well understood in the art.

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8. As per claim 14, Keegan discloses the transmitter of claim 13, wherein the code is a pseudorandom noise (PN) code (column 2 lines 1-4).

9. As per claim 16, Keegan discloses a transmitter suitable for transmitting a staggered pulse signal, comprising:

Code generator means for generating a plurality of pulses according to a code (column 2 lines 1-4);

Means for generating a cryptographic sequence based on a cryptographic key (column 4 lines 46-52); and

Means for amplifying a first one of the pulses of the code to a first level and amplifying a second one of the pulses of the code to a second level based on the cryptographic sequence, wherein the means for amplifying responds to the cryptographic sequence to amplify a group of a sequence of the pulses to a higher voltage level than pulses not in said groups, so that successive ones of said groups of pulses are separated by a time interval that is related to said cryptographic sequence, and wherein the durations of the time intervals between said successive groups represents synchronization information for said signal (see rejection for claim 13 above).

10. Claim 17 is rejected because it discloses similar subject matter to claim 14.

11. As per claim 19, Keegan discloses a receiver for receiving a staggered pulse signal having high-power pulses of a code separated by time intervals according to a cryptographic algorithm, the receiver comprising:

A cryptographic unit configured to generate a cryptographic sequence corresponding to the cryptographic algorithm (column 4 lines 46-58); and

A code detection unit connected to the cryptographic unit and configured to detect a code phase of the received staggered pulse signal that comprises a group of a sequence of pulses at a higher power than pulses not in said group such that successive ones of said groups of pulses are separated by a time interval that is related to said cryptographic sequence, wherein the code detection unit decodes the time intervals between said successive groups of higher power pulses and thereby acquires synchronization to the staggered pulse signal (column 8 line 36 –column 9 line 12 wherein the particular receiver is necessary to receive the transmitted signal disclosed in claims 13 and 16).

12. As per claim 20, Keegan discloses the receiver of claim 19, wherein the code detection unit comprises:

A correlator configured to correlate the received signal with a local code and to output a correlation signal; and

A decoder unit configured to decode the correlated signal based on the cryptographic sequence generated by the cryptographic unit (column 8 line 60 –column 9 line 12).

13. As per claim 21, Keegan discloses the receiver of claim 20, wherein the decoder unit comprises a matched filter configured to detect a sequence of time intervals between the high power pulses of the received signal corresponding to the cryptographic sequence to acquire synchronization to the staggered pulse signal (column 8 line 60-column 9 line 12; wherein as is well understood in the art, the matched filter is derived by correlating the unknown signal with the replicated signal).

14. As per claim 22, Keegan discloses the receiver of claim 21, wherein the cryptographic unit comprises a cryptographic processing unit and a cryptographic storage unit having stored therein cryptographic keys, wherein the cryptographic processing unit generates the cryptographic sequence based on a key stored in the cryptographic storage unit (column 4 lines 49-52 wherein it is inherent that the cryptographic key may be stored in a storage unit).

15. As per claim 23, Keegan discloses the receiver of claim 19, wherein the decoder unit uses a pseudorandom noise (PN) code to decode the correlated signal (column 4 lines 53-56).

16. Claim 24 is rejected because it discloses similar subject matter to claim 19.

17. Claim 25 is rejected because it discloses similar subject matter to claim 20.

18. Claim 26 is rejected because it discloses similar subject matter to claim 21.

19. Claim 27 is rejected because it discloses similar subject matter to claim 23.

20. Claim 28 is rejected because it discloses similar subject matter to claim 1.

21. Claim 29 is rejected because it discloses similar subject matter to claim 19.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon S. Bludau whose telephone number is 571-272-3722. The examiner can normally be reached on Monday -Friday 8:00-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brandon S Bludau
Examiner
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